

## TRANSPERITONEAL REMOVAL OF TUMORS OF THE BLADDER.

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THE general application of modern methods in the examination of diseases of the bladder has been of great value in making early diagnoses of tumors of this viscus.

With the aid of the cystoscope, portions of growths are removed by snares, forceps, or by curettes, and then washed from the bladder for examination. The result of the microscopical examination when considered with the location and extent of the tumor as shown by the cystoscope enables the operator to choose a method which will offer the greatest possibility of cure to the patient.

Cystoscopic examinations should be made by means of fluid distention of the bladder, as small pedunculated papillomata will float out in the liquid when they might cling to the mucosa in air distention and thus be overlooked.

In the natural evolution of the surgery of this region, which is still far from being crystallized, many changes from former methods of treating diseases and their complications have become necessary.

When we consider Watson's statement that operations in 28.6 per cent. of benign, and 46 per cent. of carcinomatous growths of the bladder have been surgical failures, we can see the necessity for early diagnosis, and the choice of a method of approach so that radical operations may be the rule and not the exception.

The ordinary routes of attack have been the suprapubic, infrapubic, urethral, vaginal, or perineal.

The operative technic as made through the urethra, will naturally be chosen by those who become expert in the use of the cystoscope, but we believe that very few tumors will be eradicated by this route, and that it is not the best method

for the general surgeon. Watson shows that for an apparently simple procedure it is accompanied by a rather high mortality.

Of the other methods, the suprapubic is the most commonly employed. Through various abdominal incisions the bladder is opened in the Retzius space, great care being exercised to preserve the peritoneum intact. By this route papillomata have been removed with 20 per cent. mortality, carcinoma with 28 per cent., and sarcoma with 63 per cent., with early recurrence in over 20 per cent. of cases either benign or malignant, as given by Watson who has collected a large series of operations, the work of many surgeons. (*ANNALS OF SURGERY*, Dec., 1905.)

Considered from an operative standpoint we must recognize the fact that surgical failures are common in all kinds of tumors of the bladder above the prostate. Owing to the great tendency to recurrence as well as the possibility of a change in the character of benign growths, they must all receive radical treatment. Therefore, it is not my purpose in these remarks to devote time to the various tumors of the bladder from a pathological point of view, nor to those advanced cases which require the complete removal of the viscus. In this connection, we desire to call attention to the fact that the lymphatics of the bladder are few and inactive, which fact delays metastasis of malignant tumors, rendering them for a considerable period a local disease. Carcinoma confined to the bladder may be looked upon as curable by operation.

Clinically there occur: first, tumors with a pedicle; second, those with a broad base of attachment to the mucosa; third, those which involve the whole thickness of the bladder wall.

The latter variety may by continuity of tissue involve other organs; the prostate, ureter, urethra, or adjacent abdominal structures. Very large areas of the bladder, two-thirds or more, can be resected and the remainder will regenerate and dilate to a considerable extent, often forming a very serviceable organ, as pointed out by Harris. (*ANNALS OF SURGERY*, Oct., 1902.)

In an effort to develop an operation which would render all parts of the bladder accessible, the transperitoneal method seemed to be the most favorable. Watson (*ANNALS OF SURGERY*, Dec., 1905) has considered the removal of the unopened bladder through such an incision. F. Harrington (*ANNALS OF SURGERY*, 1893) has reported a case of chronic disease of the bladder treated by the transperitoneal incision. As a rule, when used at all, the method has been one developed without previous plan, of necessity or accident at the time of operation.

We have not been satisfied with the ordinary suprapubic incision in operating upon large tumors of the bladder, as, while several cases did exceedingly well, in two instances of cancer, we not only failed to cure the local condition, but unfortunately transplanted the disease to the abdominal wall and space of Retzius.

The usual result of imperfectly removed cancer is not only that relief is temporary, but the growth of the recurring tumor is usually more rapid and the condition of the patient, if anything, is worse than before the operation.

After securing the most favorable general and local conditions possible, the bladder being cleansed and emptied, an operation is made after the following method:

*Operation.*—The patient is placed in the high Trendelenberg position and a median incision made from the pubes upwards for six inches or more. The pelvis is well packed with gauze pads which hold the intestines in the upper abdomen. The abdominal incision is also protected by gauze pads. The bladder is caught by two tenaculum forceps lifted into the wound and opened by a two-inch median incision. The small amount of fluid in the bladder is absorbed with gauze and the incision is enlarged upward and downward until it is ample for the purpose. The tumors may be cut from the bladder with scissors and the denuded area burned with cautery.

Malignant growths involving the lower half of the bladder can be raised with tenaculum forceps and resected with a Paquelin cautery. The area removed should include healthy

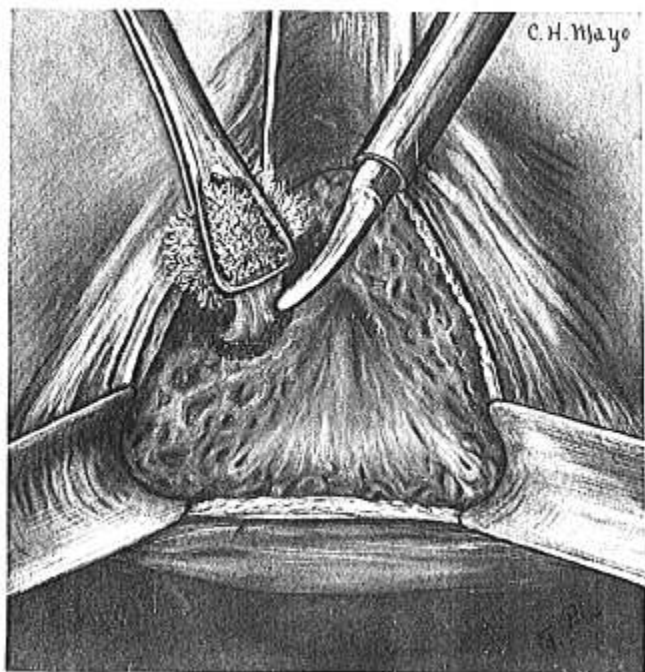
mucosa surrounding the tumor. No sutures are required to close these areas, the space being allowed to cicatrize.

When malignant growth necessitates the removal of a great part of the bladder, it is divided and removed freely, whether covered by peritoneum or not. In making the incision, one-third to one-half inch of tissue about the urethral entrance should be preserved if possible. If the bladder be involved at the ureteral opening, after the diseased portion of that viscus is removed, it is divided near the bladder and drawn into the abdomen through a perforation in the peritoneum close to the remaining half of the bladder, into which it is passed and where it is attached with catgut sutures. The peritoneum is closed over the exposed ureter in a fold by a few sutures, a method which insures rapid healing. The remaining portion of the bladder is now closed, often forming a greatly reduced but serviceable viscus.

The bladder wound, regardless of its size, is closed by a through and through continuous suture of catgut introduced in the original Connell method. This stitch is a running mattress suture and is passed through the entire thickness of the bladder wall, all loops pulling from the mucous side, and when drawn close, making a complete air-tight and water-tight continuous mattress stitch. The line of suture is now protected by a suture of silk, or preferably linen, applied as a Cushing parallel peritoneal suture, taking a square bite of the peritoneum first on one side then on the other of the line of closure, the needle being inserted parallel with the incision. This suture approximates the peritoneum and protects the primary suture just as when it is employed in gastrojejunostomy, and is used for the closure of all the bladder incisions and resections regardless of the amount removed.

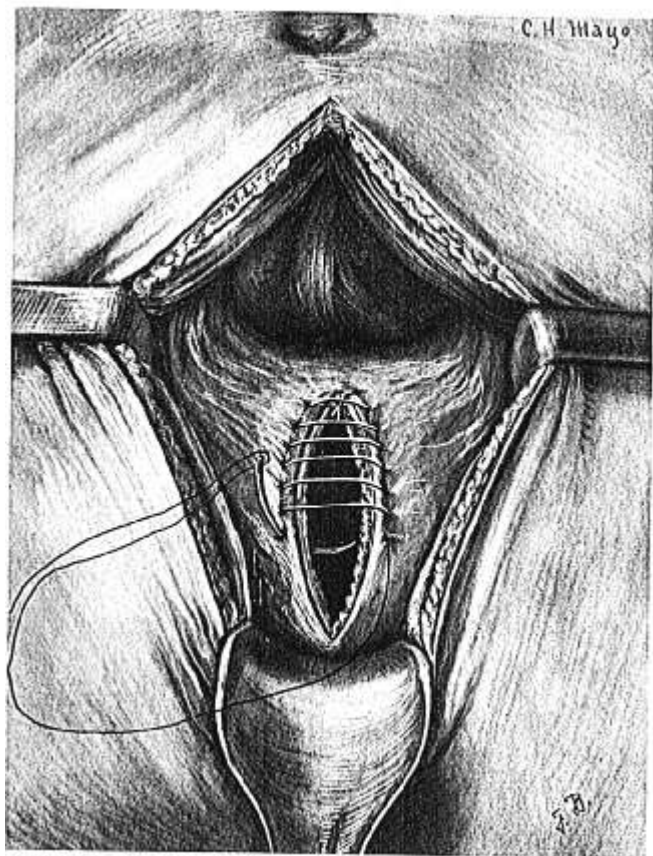
Should the bladder incision pass forward of the peritoneal fold, the closure will be the same, and is accomplished by drawing the bladder toward the abdomen and carrying the peritoneal fold to a lower level; the advantage of securing early peritoneal adhesions being developed to the fullest extent. As a rule the abdominal wound is closed without drainage, but

FIG. 1.



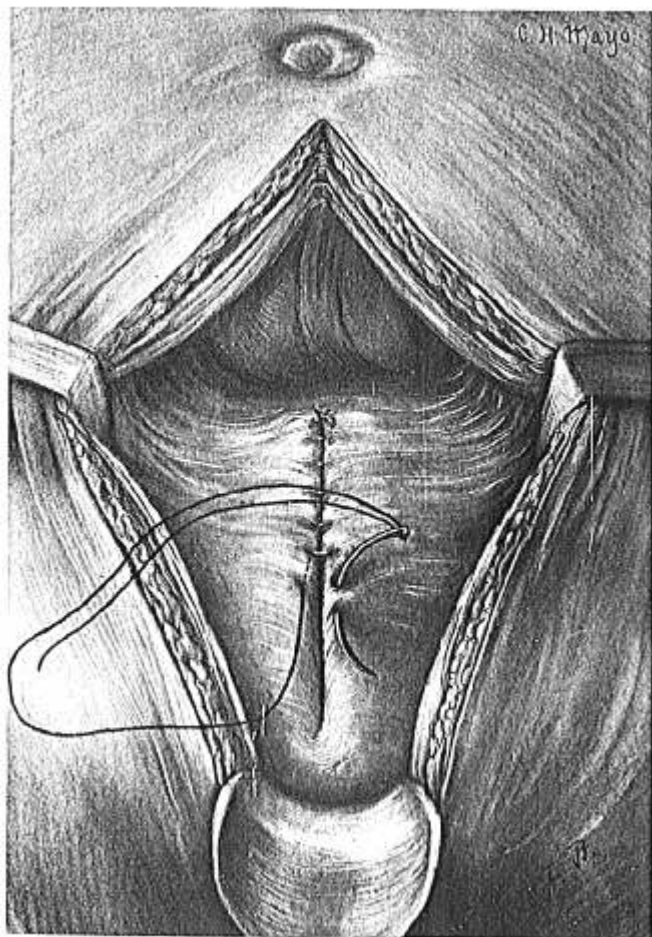
Cautery resection of papilloma of bladder

FIG. 2



Showing method of closure of bladder incision.

FIG. 3



Cushing peritoneal suture closing bladder wound.

FIG. 4.



Removal of large amount of bladder with transplantation of ureter.



should the general cavity of the peritoneum become soiled, a temporary drainage could be made through a stab-wound. The bladder is catheterized at regular intervals for the first few days following the operation, if it is necessary, but as a rule the patients void their urine at frequent intervals with little distress.

We have in five instances operated upon large papillomata of the bladder by the transperitoneal route, without mortality. Three of these tumors were carcinomatous, the others benign. A brief report of these cases is appended.

CASE I.—Male, 27. Ten years with bladder symptoms and more or less blood in the urine. Large sessile base. Carcinoma left side of bladder. Operation, 3-27-'07. Transperitoneal resection of over one-half of the bladder with transplanting of left ureter into the right half of the bladder. Bladder drained by perineal incision. Voluntary urination with control of bladder after first three or four hours. In the fourth week all drains closed.

CASE II.—Female, 39. Duration of symptoms two years. Blood in urine one year with much local pain. Cystoscope disclosed three tumors of lateral bladder wall, two small and one as large as a lemon. Operation, 5-1-'07. Transperitoneal with cautery resection of malignant papillomata. Bladder incision closed. Urine voluntary. Case well at examination after ten months.

CASE III.—Male, 50. Duration of symptoms sixteen months. Blood in urine almost constant. Papilloma size of small orange. Benign. Operation, 6-14-'07. Transperitoneal, and excision with cautery. Bladder incision closed without drainage.

CASE IV.—Male, 49.—Slight symptoms two years. Blood in urine three months. Operation, 12-7-'07. Transperitoneal removal of sessile carcinoma size of walnut near base over left lobe of prostate. Four inches bladder resected with cautery. Prostate removed through same incision. Suprapubic drain. Voluntary urination with healed drains in three weeks.

CASE V.—Male, 54. Duration of symptoms two years. Blood in urine one year. Tumor, right wall, size of walnut. Operation, 1-8-'08. Transperitoneal resection, cautery.